



Background

Hurricane Georges Devastates Puerto Rico: September 1998

D*evastating* is the word that best describes the damage to Puerto Rico from Hurricane Georges on September 21 and 22, 1998. Moving east to west across the entire 100-mile length of Puerto Rico's main island with maximum sustained winds of 115 miles per hour, Georges dumped 27 inches of rain in places. The storm disrupted 100 percent of Puerto Rico's electrical service and damaged or destroyed more than 217,000 homes, 40 bridges, and 95 percent of the plantain and banana crops.

The Federal Government and the Government of Puerto Rico worked as partners to meet the immediate

emergency needs of Puerto Rico's 3.9 million residents in 78 municipalities, all of which were designated Presidential disaster areas by President Bill Clinton at the request of Governor Pedro Rosselló.

But even after the most urgent needs had been addressed, it was clear that recovery from Hurricane Georges—Puerto Rico's worst natural disaster in 70 years—would be a long-term challenge.

To assist the Government of Puerto Rico in developing a comprehensive action plan for full recovery, President Clinton asked Federal Emergency

Management Agency (FEMA) Director James Lee Witt to convene the President's Long-Term Recovery Task Force. (Members of the Task Force are listed in Appendix A.)

Hurricane Georges made headlines around the world for the devastation it left in Puerto Rico. But equally newsworthy are the people who not only survived Georges, but who are using the rebuilding process to reduce their risks during future natural disasters. These are the true heroes of Georges. This is their report. ■

Meeting with their counterparts from the Government of Puerto Rico on October 14, 1998, the Task Force members identified five long-term recovery priorities:

- **Housing**
- **Mitigation (Rebuilding Safer and Smarter)**
- **Economic Revitalization and Sustainability**
- **Energy**
- **Transportation**

Of the five priorities, two emerged as critical: meeting the disaster housing needs of Puerto Ricans whose homes were damaged or destroyed by Hurricane Georges; and, rebuilding safer and smarter so all Puerto Ricans will be better protected during future disasters.

To meet these goals, President Clinton called for an aggressive and creative partnership of resources and funding at every level of government. This report illustrates the success of the action plan and demonstrates how the partnerships created after Hurricane Georges are building stronger, more disaster-resistant homes, businesses and communities throughout Puerto Rico.



Rather than rebuild his damaged home, retired farm laborer Julio Ocasio Medina is building a new, concrete home from a pre-designed model.

"I'm making a good investment," says Ocasio Medina, who received a combination of grants and loans from FEMA's Disaster Housing Program and USDA Rural Development.



Housing

Rebuilding with Friends, Family and Government Assistance

Felix Vazquez de Jesus still remembers watching with horror as Hurricane Georges destroyed his wooden house in Humacao.

"I saw it blow by, piece by piece," says Vazquez de Jesus, 87, who rode out the hurricane from the safety of his nephew's nearby concrete house.

Vazquez de Jesus, a retired truck driver and widower, built his house in the mid-1950s. Through the years, the wooden structure sustained repeated damage from Hurricanes Hugo and Hortense before finally crumbling from the forces of Georges.

"All that was left was the floor," says Noemi Morant, a community development manager for the

U.S. Department of Agriculture's (USDA) Rural Development. Morant met Vazquez de Jesus three days after the hurricane when she volunteered to clean his mud-encrusted home.

The day after Hurricane Georges hit, representatives from the U.S. Small Business Administration (SBA) arrived in Puerto Rico to offer low-interest, long-term disaster loans to homeowners and renters affected by the hurricane. In the end, the SBA approved more than \$115 million in low-interest disaster loans to 10,786 applicants.

But not all Puerto Ricans were financially able to secure disaster loans. For this reason, and because of the magnitude of the disaster, President Clinton directed FEMA to use its disaster housing programs as aggressively

Felix Vazquez de Jesus welcomes his niece Isabel Vazquez to his reconstructed home in Humacao.



as possible to meet the needs of disaster victims like Felix Vazquez de Jesus.

Because his financial and medical conditions made repaying a loan impossible, Vazquez de Jesus received \$3,977 from FEMA’s Individual and Family Grant Program and \$6,091 from FEMA’s Disaster Housing Program to repair his roof and walls. He also received \$3,000 from Puerto Rico’s

Department of the Family, as well as a \$7,500 grant from USDA’s Rural Housing Service to install a new electrical system and rebuild his home on a concrete foundation so the structure will be safer in future disasters.

But it takes more than money to recover after a disaster. Just ask Vazquez de Jesus’s friends and family who volunteered to rebuild his home. The architectural design came courtesy of Pastor Ramon Casillas from the Seventh Day Adventist Church of Humacao, where Vazquez de Jesus has been an active member for more than 30 years. “When I saw the situation, I knew I had to help,” says Casillas, who has a background in construction.

Family and neighbors pitched in during the construction phase of the project. Brothers and nephews built the new roof while friends and nieces painted walls.

Government Assistance to Felix Vazquez de Jesus

USDA Rural Housing Service 504 Grant	\$7,500
FEMA Disaster Housing Program	\$6,091
FEMA Individual & Family Grant	\$3,977
Puerto Rico Department of Family Grant	\$3,000
TOTAL:	\$20,568

Representatives from USDA Rural Development visited the site twice monthly to make sure all appropriate disaster-resistance measures were incorporated into the rebuilding effort and to authorize the continued payments of the \$7,500 grant, which was delivered in phases.

“We were like family after the inspectors (from USDA Rural

Development) came so many times to see my house,” says Felix Vazquez de Jesus, who, like many disaster victims, lived with nearby relatives while his home was rebuilt. Though Felix himself was unable to help with much of the physical labor, he cheered on the workers from the sidelines. “He always said, ‘Here, have some juice and cookies for helping,’” says his niece Isabel Vazquez with a laugh.

Government Assistance for Disaster Housing		
Program	Federal Funds Committed	Government of Puerto Rico Cost Share
FEMA Individual & Family Grant 243,241 applicants approved	\$417,339,150	\$130,000,000
FEMA Disaster Housing Program 256,794 applicants approved	\$470,414,478	
SBA Home Disaster Loans 10,786 applications approved	\$115,251,100	
USDA Rural Development Housing Grants for Single Family Housing Repairs 175 applicants approved	\$867,838	
USDA Rural Development Housing Loans for Repair of Damaged Homes 79 applicants approved	\$335,650	
USDA Rural Development Housing Loans for Purchasing New Homes and New Home Mortgages 79 applicants approved	\$4,768,638	
HUD Federal Housing Administration Mortgage Insurance for Disaster Victims	\$2,286,864	
TOTAL:	\$1,011,263,718	
* An additional \$278,373,899 in government funding was committed to Puerto Rico's New Secure Housing Program (see the Mitigation section for details).		

But her uncle Felix feels more like crying when he looks at his rebuilt home. With its cement and concrete base, steeply pitched roof and hurricane-proof windows, Felix Vazquez de Jesus's home on Orquídea Street, modest though it is, represents more than safe shelter. "I feel like crying with happiness that I was so loved by all these people who helped me," says

Vazquez de Jesus, his weathered face glowing with gratitude. "Even people I'd never met before helped me."

His nephew, Israel Vazquez, is equally grateful. "This house is well-constructed," he says, looking at the home that was built with care by friends and family. "Now he's safe." ■

- **More than 217,000 homes in Puerto Rico were damaged or destroyed by Hurricane Georges.**
- **During the devastating hurricane and immediately following it, 439 shelters provided temporary housing for the 31,500 Puerto Ricans who were displaced from their homes.**
- **More than 405,000 Puerto Ricans teleregistered with FEMA for disaster assistance.**
- **The Federal family of agencies provided more than \$1 billion to Puerto Ricans to repair homes damaged by Hurricane Georges.**
- **FEMA's National Flood Insurance Program (NFIP) paid \$25,476,047 in flood claims to Puerto Ricans as a result of Hurricane Georges. Flood insurance claims are paid with policyholders' premium payments and not by taxpayer dollars.**

Governor Rosselló (center) and others
celebrate the groundbreaking in Toa Baja.



Mitigation

New Secure Housing Program: A Groundbreaking Approach to Hazard

*“The day will come
when the damages
from a disaster will
be minimal and all
Puerto Rican
families will be
safe.”*

– Governor Pedro Rosselló.

Other homeowners were not as lucky as Felix Vazquez de Jesus, who was able to rebuild his hurricane-damaged house.

Simple repairs were not an option for thousands of Puerto Rican homeowners, many of whom had suffered damage during previous disasters to homes and neighborhoods that, as Hurricane Georges proved, were clearly unsafe. A more permanent solution was needed.

The challenge for Puerto Rico, echoed in the President’s Long-Term Recovery Action Plan, was to replace the thousands of homes damaged or destroyed by Hurricane Georges with new affordable homes that could withstand future disasters.

Less than a month after the hurricane, Governor Pedro Rosselló created by Executive Order the New Secure Housing Program and established a multi-agency task force to develop a plan for building thousands of new disaster-resistant homes. The Governor’s Task Force also committed to undertaking permanent mitigation measures designed to reduce the threat of future disaster losses.

Fourteen months after Hurricane Georges ripped across Puerto Rico, Governor Rosselló and his Task Force members broke ground on the first project in the New Secure Housing Program, an unparalleled building initiative funded by FEMA and the Government of Puerto Rico.



Contractors Ariel Perez (left) and Dana Pollitt (right) study designs for the New Secure Housing Program at the building site in Toa Baja. The New Secure Housing Program, an unparalleled building initiative by FEMA, HUD and the Government of Puerto Rico, is a long-term approach to creating disaster-resistant homes and communities.

The groundbreaking at Campanillas Farm in Toa Baja kicked off a 20-month, \$13.2 million construction project that will result in 223 new concrete homes constructed in accordance with Puerto Rico's new building codes.

Officials with the Government of Puerto Rico expect to build nearly 600 new disaster-resistant homes in three planned communities during the first 24-month phase of the New Secure Housing Program. Though the construction sites are on public land owned by the Puerto Rico Land Authority, applicants selected to participate in the program will become true homeowners, thanks to low-interest financing by Fannie Mae approved mortgage lenders.

New Secure Housing Program Flagship Project in Toa Baja

La Comunidad Campanillas
Cost
223 residences

Projected

\$13,200,000*

* This cost represents a partnership between Federal (75%) and Government of Puerto Rico (25%) funding sources.

Government Funds Committed to the New Secure Housing Program

Program

Funds Committed

FEMA Hazard Mitigation Grant Program

\$194,240,566

FEMA FY 1999 Emergency Supplemental
Appropriations Funding

\$15,600,000

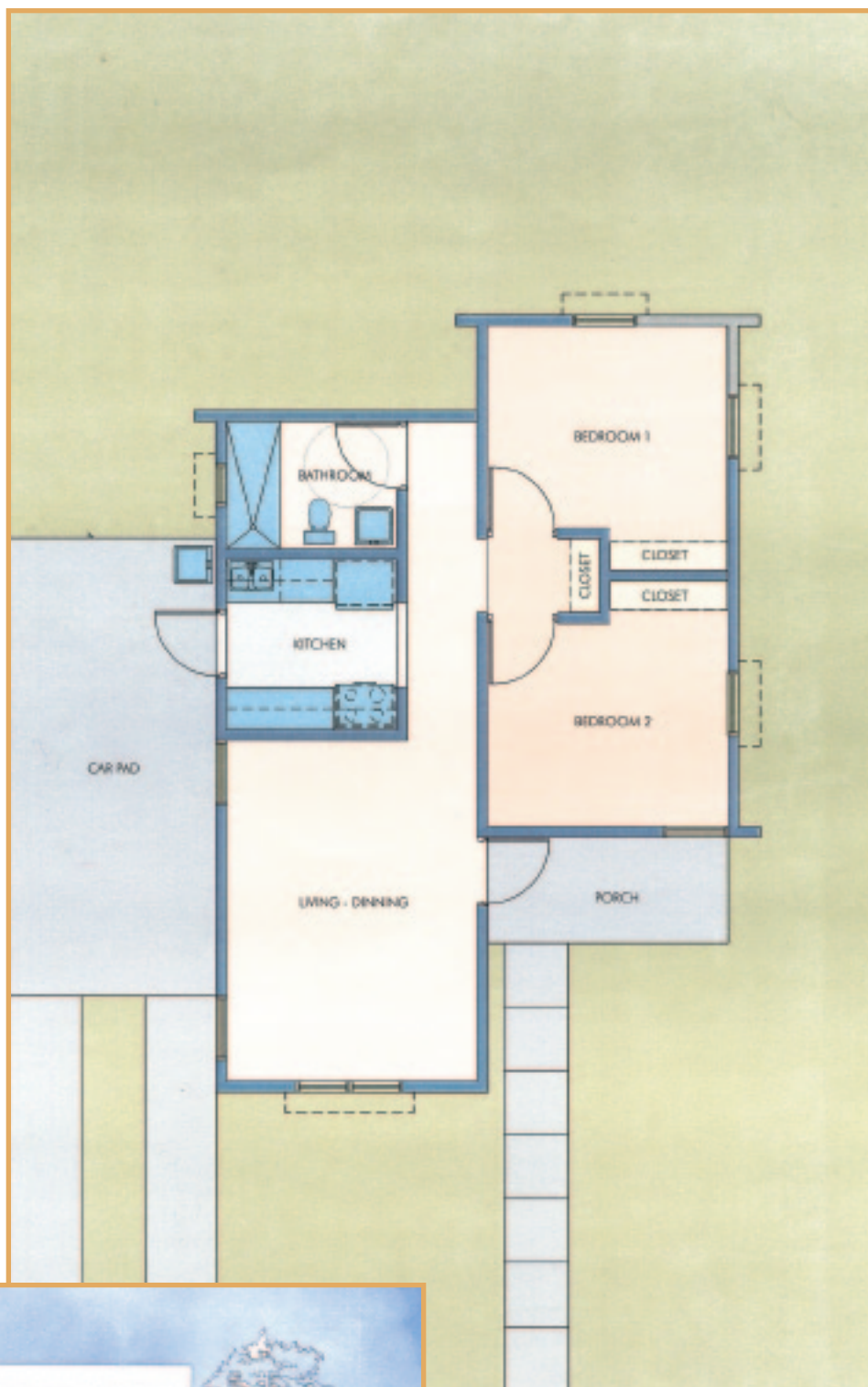
Government of Puerto Rico

\$68,533,333

Puerto Ricans who wish to build their own new, safe homes may also participate in the New Secure Housing Program, provided their building sites are not in flood-prone, landslide or seismic areas, and that construction adheres to Puerto Rico's new building codes. More than 1,200 Puerto Rican families are expected to begin building disaster-resistant homes during Phase I of the program.

The homes at Campanillas Farm in Toa Baja, designed to resist damage from hurricanes and earthquakes, will consist of two or three bedrooms, one bathroom, a living room, dining room, kitchen and porch. Participating homeowners will enjoy the gardens, playgrounds, paved streets and sidewalks in the planned safe community, located near urban areas, schools and businesses. But perhaps most of all, they will enjoy the peace of mind that comes from knowing their homes have been built to withstand nature's deadliest wrath.

In the middle of the groundbreaking ceremony at Toa Baja, the postcard blue sky suddenly opened to unleash a downpour. The showers and wind gusts were short-lived; the only damage was comical: an umbrella turned inside out.



Design plan for a two-bedroom model house in Toa Baja.

The brief rain shower could not dampen the spirits of the more than 200 people who huddled under a tent for the groundbreaking. If anything, the downpour illustrated the importance

of safe shelter during a storm and Puerto Ricans' commitment to building permanent, safe and affordable homes to protect lives and property from the next major disaster. ■

Governor Rosselló and President Clinton discuss Puerto Rico's housing needs as a result of Hurricane Georges.



- **After Hurricane Georges, building new, safe homes for Puerto Ricans was Governor Pedro Rosselló's greatest concern. When the President's Long-Term Recovery Task Force convened, addressing long-term housing needs created by the hurricane became a Presidential priority.**
- **Improving the sustainability of Puerto Rico's buildings and structures became the cornerstone of long-term recovery efforts. Extensive work in this priority area by FEMA and Puerto Rico's Regulations and Permits Administration (ARPE) resulted in the Government of Puerto Rico's adoption of the 1997 Uniform Building Code (UBC). Implementation of the improved standards will greatly reduce loss of life and property from future disasters.**
- **To protect lives, property and businesses during future natural disasters, \$142.3 million has been authorized for the U.S. Army Corps of Engineers to implement flood control projects in Puerto Rico.**
- **USDA Rural Development made 79 loans totaling \$4,768,638 to rural families to purchase homes away from flood-prone areas. USDA's Natural Resources Conservation Service committed \$7.8 million for mitigation projects designed to restore streams, remove debris, and protect life and property through the Emergency Watershed Protection Program.**
- **In the 12-month period following Hurricane Georges, 6,832 new insurance policies were written for Puerto Ricans by the National Flood Insurance Program (NFIP), bringing the total number of flood insurance policies in Puerto Rico to 50,575. In addition, the municipality of Ponce became a NFIP community in September 1999, making more Puerto Ricans eligible for flood insurance and potentially reducing the Federal cost of future disasters.**

The Martínez family used a combination of private insurance and FSA loans and grants to build a stronger steel frame barn and purchase the first 3,000 hens in their planned 50,000 hen operation. "I'm very happy to be back at work," says Glidden Martínez, who replanted his plantain crop eight months after the hurricane.



Economic Revitalization and Sustainability

Rejuvenating Puerto Rico's Economy

Hurricane Georges dealt a crushing blow to Puerto Rico's economy, especially its farms and small businesses. Damage estimates for agricultural losses approached \$315 million while nonagricultural business losses were estimated at \$2 billion.

Rebuilding an economy after a major disaster can seem like a chicken-and-egg dilemma. Business owners need capital to pay for repairs so they can reopen their doors. But how does a business or farm generate the cash flow necessary to rebuild when disaster damages render it inoperable?

For farmer Glidden Martínez, it was literally a question of chickens and eggs. Martínez and his wife Ulda, successful farmers in Utuado since 1975, lost

50,000 laying hens during Hurricane Georges, as well as 20 acres of plantains and two barns. Not only was their cash flow halted, Glidden Martínez was also forced to lay off four farm workers while he and his youngest son, Joauanny, rebuilt the poultry barn. Private insurance provided the Martínez family farm with \$220,000. But with the cost of rebuilding just one of the barns estimated at \$300,000, it was clear that Glidden Martínez and his family would need another source of income if they were to return to farming.

Glidden Martínez visited the USDA Service Center in Utuado and applied for several disaster assistance programs administered by the USDA's Farm Service Agency (FSA). He was accepted. The Martínez family used



Glidden Martínez successfully rebuilt his family's farm after Hurricane Georges.

their FSA disaster loans and grants, along with private insurance, to replant their plantain crop and rebuild a steel frame poultry barn, modeled after barns that withstood the hurricane-force winds.

Fourteen months after the hurricane, Glidden and Joauanny, along with 3,000 laying hens, were back at work. “If it were not for the help of FSA, I would not have recovered,” says Glidden Martínez, whose \$400,000 disaster loan from the FSA will be financed at 3.75 percent for 20 years.

Other business owners and non-profit organizations used low-interest, long-term disaster loans from the SBA to expedite their economic recovery. Miguel A. Esteves-Medina, president of an office furniture store in Rio Piedras, financed his economic recovery from Hurricane Georges with a combination of private insurance and a \$200,000 SBA disaster loan.

“We opened a week and a half after the hurricane,” says Esteves-Medina, who also had the help of family, friends and employees. “We have employees who have been with us for 20 years,” he explains. “Everyone helped.”

Federal Assistance to Martínez Farm

Program	Amount Approved
USDA Farm Service Agency Emergency Loan	\$400,000
USDA Farm Service Agency Crop Loss Disaster Assistance	\$10,098
USDA Farm Service Agency Livestock Indemnity Program	\$50,000
TOTAL:	\$460,098

Federal Assistance to Puerto Rico's Economy after Hurricane Georges

Program	Amount Committed
USDA Farm Service Agency Crop Loss Disaster Assistance 4,792 applicants approved	\$47,098,716
USDA Farm Service Agency Non-Insured Assistance 852 applicants approved	\$4,496,885
USDA Farm Service Agency Emergency Conservation Program (Hurricane) 3,138 applicants approved	\$9,708,103
USDA Farm Service Agency Agriculture Conservation 63 applicants approved	\$212,549
USDA Farm Service Agency Dairy Market Loss Assistance 327 applicants approved	\$1,323,992
USDA Farm Service Agency Small Hog Operations (I and II) 1,120 applicants approved	\$1,083,726
Department of Labor Disaster Unemployment Assistance 5,599 applicants approved	\$4,153,000
Department of Commerce Economic Development Administration 12 projects approved	\$8,670,000
SBA Business Physical Loss Loans 2,089 loans approved	\$43,950,600
SBA Economic Injury Disaster Loans 1,826 loans approved	\$17,794,000
TOTAL:	\$138,491,571



A \$200,000 SBA disaster loan, in conjunction with private insurance, made it possible for Miguel A. Esteves-Medina to reopen his successful office furniture store in Rio Piedras and resume business as usual after Hurricane Georges.

Miguel Estevez-Medina and the Martínez family weren't the only business owners who recovered from the September 1998 hurricane. In fiscal year 1999, Puerto Rico's GNP grew at a rate of 4.2 percent to \$38 billion, the second time in only 20 years the economic pace surpassed 4 percent. Economists credited the growth rate to a combination of construction investments and hurricane-related funding.

But Joauanny Martínez would rather talk about great natural products than gross national products. "Of course it's good to be back at work," says Joauanny, retrieving the first two eggs from the post-Georges poultry operation. "We'll have these for breakfast tomorrow." ■

- **Working with Governor Rosselló and Resident Commissioner Carlos Romero-Barcelo, President Clinton obtained Congressional approval for an initiative to encourage new private sector investment in Puerto Rico. For the first time, companies based in the States will receive Federal tax credits for product research and experimentation done in Puerto Rico.**
- **The Clinton Administration also won Congressional support for increased fiscal assistance to Puerto Rico. The Government of Puerto Rico's portion of the tax revenue collected from the Federal excise tax on rum not made in the States will increase from \$10.50 to \$13.25 per proof gallon. This increase will remain in place from July 1, 1999 to December 31, 2001. The initiative is expected to generate over \$150 million. With the support of Congressman Romero-Barcelo, Governor Rosselló agreed to dedicate one sixth of the new revenue to the Puerto Rico Conservation Trust, a joint initiative between Puerto Rico and the Department of the Interior to preserve land and historic resources in the islands.**
- **In August 1999, the Department of Commerce's (DOC) Economic Development Administration (EDA) approved a \$2 million grant to the Puerto Rico Industrial Development Corporation (PRIDCO) to assist in an island-wide industrial park flood mitigation program. The project is expected to be completed within one year and will save 2,000 existing jobs while stimulating new industrial development in Puerto Rico's industrial parks. In addition, EDA approved grants totaling \$3.12 million to five Puerto Rican municipalities to assist in flood mitigation projects and the reconstruction of agricultural roads. The projects are expected to save at least 500 jobs and create more than 100 new, permanent jobs.**
- **The Environmental Protection Agency (EPA) coordinated with Puerto Rico's sewage treatment plant operators to develop contingency plans for use during future disasters.**

Francisco Marín (left) and José Medina-Barceló (center) of PREPA partnered with Antonio Matos (right), FEMA's Public Assistance coordinator, during the recovery from Hurricane Georges.



Energy

Empowering Puerto Ricans

“The negative effects of Georges gave us a positive opportunity to improve our service,” says PREPA’s José Medina-Barceló. “We’re now five years ahead of schedule.”

As a result of the vast destruction left in the wake of the storm, utility crews at Puerto Rico Electric Power Authority (PREPA) worked around the clock for weeks to return power to Puerto Rico. In the immediate aftermath of Georges, 100 percent of the electrical service was disrupted. After long hours and hard work, electrical power was restored throughout most of Puerto Rico by November 30, 1998.

But simply restoring power was not enough. The challenge for PREPA was to use the time and resources after Hurricane Georges to rebuild the utility infrastructure stronger and safer with the goal of reducing the threat of power losses during future disasters. “We tried to turn something as negative as a hurricane into a positive opportunity to improve,” says PREPA recovery coordinator José Medina-Barceló, who

worked 154 consecutive days after the hurricane with his Federal partners to design a long-term recovery plan for Puerto Rico’s devastated utility service.

Rebuilding PREPA’s infrastructure was supported with more than \$132 million in funding from FEMA’s Public Assistance Program, which also helped Puerto Rico and its municipalities fund emergency protective measures on public lands; repair and replace public roads, bridges, water control facilities, and buildings; and, remove debris left by the hurricane.

The results of PREPA’s long-range recovery plan are visible today throughout Puerto Rico in the form of stronger utility lines and poles. In Caguas, one of Puerto Rico’s largest municipalities, a stretch of almost 60 new concrete and steel utility poles stand in the place of wooden poles

Government Public Assistance

Program	Federal Funds Obligated	Government of Puerto Rico Cost Share
FEMA Public Assistance Program Assistance to PREPA	\$132,861,237	\$14,676,821
FEMA Public Assistance Program Total Public Assistance to Puerto Rico	\$394,215,934	\$42,137,470

that were damaged or destroyed by Georges. “We’ve replaced close to 10,000 wooden poles with concrete utility poles,” says Medina-Barceló. “Before Georges, our plan was to replace 125 wooden poles a month. Now we’re ahead of schedule.”

PREPA’s long-term recovery also includes plans to construct underground lines to connect San Juan’s transmission centers. The first phase of the project will serve a district between Hato Rey and Monacillos, providing a disaster-resistant source of electrical power

Wendolyn Rodriguez Sanchez (right) and Jahaira Reyes Sanchez (left), high school students and cousins, welcomed the improved electrical service to Pezuelas.



to hospitals, schools and government offices. Buried lines will also eliminate the risk associated with downed power lines. Though no lives were lost at the height of Hurricane Georges, six Puerto Rican utility workers lost their lives during the response phase. “One was on his way home from work,” explains PREPA’s Medina-Barceló. “Someone stopped him and asked him to help. In the process of helping he was electrocuted.”

Making sure such tragedies are a thing of the past is the goal of PREPA’s long-term recovery program, which is already benefiting residents in Pezuelas. In this small community in the municipality of Lares, 150 families had become used to losing power during rainstorms. “When it would rain a lot, the power would always go off,” says Wendolyn Rodriguez Sanchez, a high school student.

After Hurricane Georges, the power went off in Pezuelas and stayed off — for four months. “Sometimes I had to use candles to do my homework,” says Wendolyn, who recalls the worst part of the experience: “We had to go to bed early.”

Others were more concerned about the local water supply, which the Environmental Protection Agency determined was contaminated by floodwaters associated with Hurricane Georges.

To address the problems in Pezuelas, FEMA's Public Assistance Program funded PREPA crews to replace more than 40 utility poles and upgrade the lines serving the community. In addition, Pezuelas is digging a new municipal well, which will be powered by PREPA and connected to a main water line. This commitment to rebuilding stronger and safer means residents in Pezuelas will enjoy an even more reliable source of clean water and electrical power than they had before Hurricane Georges.

In October 1999, when Hurricane José threatened Puerto Rico, residents in Pezuelas and throughout Puerto Rico were confident that they would not lose electrical power. Nor were utility crews at PREPA fearful. "We were not afraid," says José Medina-Barceló "because we knew we were stronger." By using the recovery from Hurricane Georges to build a stronger, more reliable utility system, PREPA has empowered Puerto Ricans to withstand even the most unreliable weather.

And for teenagers in Pezuelas, a dependable source of electricity means not having to do homework by candlelight. "The best part is being able to listen to the radio," says Wendolyn Rodríguez Sanchez, "all the time." ■



In the weeks following the storm, the Department of Energy worked closely with PREPA to identify mitigation improvements to make electrical transmission and distribution systems more hurricane resistant.

- **During disaster recovery operations, FEMA's Public Assistance Program generally operates on a 75 percent Federal and 25 percent State cost-share basis. Due to the severity of Hurricane Georges, President Clinton granted Puerto Rico a 90 percent Federal and 10 percent State cost-share partnership.**
- **The USDA Rural Development's Rural Utilities Service, provided a \$5 million loan and a \$1.4 million grant to the Puerto Rico Aqueduct and Sewer Authority (PRASA) to replace the sewage treatment plant serving the town of Jayuya. The existing sewage treatment plant was damaged extensively during Hurricane Georges. More than 3,000 families will benefit from the project when it is completed.**
- **Hurricane Georges highlighted the need to have generators in Puerto Rico to provide power to critical facilities during disaster-related power outages. After Georges, 112 generators arrived in San Juan to be stored in warehouses, ready for distribution by FEMA in case another disaster results in a major power failure.**
- **Representatives from PREPA are now working to establish an agreement with 16 utility companies in the U.S. to respond to major disasters.**



Transportation

On the Road to Recovery

In Arecibo, the road to long-term recovery is actually a bridge. After Hurricane Georges, more aerial photos were taken of the Victor Rojas Bridge than any other bridge in Puerto Rico. With its two missing center spans washed away with floodwaters, the ruined bridge looked like a Hollywood set for an action-adventure movie.

But for the residents who live in Arecibo and the surrounding communities, there was nothing entertaining about the destroyed bridge that, in better days, had served as a link to Arecibo's commercial district and as a tourist route to the coast. For them, it was simply a daily headache. "I used it almost every day," says Marcelino Nieves Lamboy, a retired carpenter and World War II veteran who lives 10 miles from the bridge.

Nieves Lamboy wasn't the only person who depended on the Victor Rojas

Bridge. Before Georges, approximately 18,900 vehicles per day crossed the bridge, carrying passengers on their way to work, school or the beach.

Immediately after the hurricane, the U.S. Department of Transportation's (DOT) Federal Highway Administration (FHWA) coordinated with the Puerto Rico Highway and Transportation Authority (PRHTA) to establish a plan for installing temporary bridges in areas, like Arecibo, where existing bridges were destroyed by floodwaters. Four steel panel bridges and two concrete fords were installed; four more damaged bridges were repaired and opened to traffic.

A year after the hurricane, six permanent bridges are under design to replace the damaged bridges. Funded with FHWA Emergency Relief and regular FHWA-aid dollars, the new bridges will be designed to provide

a safer, more weather-resistant transportation system in Puerto Rico.

The Victor Rojas Bridge, originally built in 1977 with 12 spans of concrete, will be reconstructed, using state-of-the-art materials, including pre-stressed high-performance concrete piles driven 150 feet below the river bed to protect the structure during flood events. Led by PRHTA's Structural Design Office in collaboration with the U.S. Army Corps of Engineers (USACE), the reconstruction effort will result in a bridge that is not only repaired, but rebuilt to be better and stronger. When it reopens in 2001, the new Victor Rojas Bridge will be disaster resistant, even during earthquakes and 100-year flood events.

"When it's finished, it will be a wonderful thing," says Marcelino Nieves Lamboy. Until then, drivers in Arecibo

are patiently enduring the daily traffic jams on their road to recovery. "If you solve the problems of the people, they don't complain," explains Arecibo Mayor Angel M. Román. "After the hurricane, we worried about the people first. Now we deal with the long-term problems. They understand it takes time." ■

"When it's finished, it will be a wonderful thing," says retired carpenter Marcelino Nieves Lamboy (right), who used the Victor Rojas Bridge almost every day before it was destroyed by Hurricane Georges.

"They know it takes time," says Arecibo Mayor Angel M. Román (left), describing his community's patience on the road to long-term recovery from Hurricane Georges.



Federal Assistance to Repair Victor Rojas Bridge in Arecibo		
U.S. Department of Transportation Federal Highway Administration	\$9,730,000	
Government Assistance for Transportation Needs		
Program	Federal Funds Committed	Government of Puerto Rico Cost Share
U.S. Department of Transportation Federal Highway Administration	\$34,000,000	
FEMA Public Assistance Program* for Municipal Roads, Bridges, Transportation & Public Works	\$73,002,415	\$8,023,805
TOTAL:	\$107,002,415	
* FEMA's Public Assistance Program provides funding for the repair and reconstruction of public roads and bridges that are not otherwise Federally funded.		

Armed with hurricane mitigation guides for the adults and coloring books for the children, Puerto Rican Boy Scouts shared ideas on ways to avoid hurricane damages.



Facing Future Disasters

Taking Pride in Taking Responsibility

In the weeks before the 1999 hurricane season began, nearly 400 young Puerto Ricans from 12 Boy Scout troops began a door-to-door campaign. The scouts, specially trained by Puerto Rico Civil Defense officials in disaster preparedness, visited homeowners in Culebra and Caguas, explaining how ordinary, common-sense precautions taken before a disaster can save lives and protect property, even during extraordinary disasters like Hurricane Georges.

Unfortunately, Hurricane Georges is probably not the last disaster these young Puerto Ricans will know by name. During their lifetimes, other devastating storms and hurricanes will visit their islands. But by helping their neighbors prepare for the worst, these scouts represent the future of Puerto Ricans. These are not the faces of future disaster victims. Rather, they are the

faces of Puerto Rico's next generation of disaster survivors who will take pride in taking responsibility for the safety of their families and communities.



Puerto Ricans did not need Hurricane Georges to remind them of their tenuous relationship with nature. In the best of times, their “Island of Enchantment” is breathtakingly beautiful. Other times, it is the scene of heart-wrenching devastation. What Hurricane Georges made clear is that Puerto Ricans can endure even a devastating natural disaster. More importantly, Puerto Ricans learned that recovering from a major disaster offers an opportunity to rebuild safer and smarter so future disaster damages can be avoided.

The President’s Long-Term Recovery Task Force concludes its mission with this final report by applauding Puerto Rico’s commitment to building disaster-resistant homes, communities and partnerships that will empower them to weather future disasters. Though members of the Task Force are willing to serve as resources for their recovery partners in Puerto Rico, it is clear that Puerto Ricans are taking the lead in their own long-term recovery and are dedicating themselves to ensuring that the next generation will be safe from future disasters. ■



Puerto Rico's Boy Scouts are natural ambassadors for FEMA's Project Impact: Building Disaster Resistant Communities.



Boy Scouts Champion Project Impact's Message

In May 1999, three Boy Scout troops from the main island traveled by government boat to Culebra, Puerto Rico's first *Project Impact* community, to promote hurricane awareness. *Project Impact: Building Disaster Resistant Communities* is an initiative that aims to shift the focus of emergency management from disaster response to disaster prevention. Participating communities across the country are assessing their vulnerabilities to hazards and developing strategies to limit damages before disasters occur.

FEMA Director James Lee Witt invited the Municipality of Culebra to become a *Project Impact* community in December 1998. Through *Project Impact*, FEMA will provide Culebra with \$500,000 in seed money for disaster prevention projects specifically designed for the community, which is located on an earthquake- and hurricane-prone island.

For the people who live and work in Culebra, building a disaster-resistant community means reducing the costs and consequences of disasters.

And for the Boy Scouts who participated in the door-to-door campaign by distributing disaster prevention guides and coloring books, *Project Impact Camporee* meant a well-deserved merit badge for emergency preparedness.

Appendix A

Members of the President's Long-Term Recovery Task Force

Director James Lee Witt, Chair	Federal Emergency Management Agency
Secretary Daniel R. Glickman	Department of Agriculture
Secretary William M. Daley	Department of Commerce
Secretary William S. Cohen	Department of Defense
Secretary Richard W. Riley	Department of Education
Secretary Bill Richardson	Department of Energy
Secretary Donna E. Shalala	Department of Health and Human Services
Secretary Andrew M. Cuomo	Department of Housing and Urban Development
Secretary Bruce Babbitt	Department of the Interior
Secretary Alexis M. Herman	Department of Labor
Secretary Rodney E. Slater	Department of Transportation
Administrator Carol M. Browner	Environmental Protection Agency
Administrator Aida Alvarez	Small Business Administration
Director Jacob J. Lew	Office of Management and Budget
Thurgood Marshall, Jr.	The White House Office, Office of Cabinet Affairs, Secretary to the Cabinet

Appendix B

Acronyms

ARPE	Puerto Rico's Regulations and Permits Administration
DOC	Department of Commerce
DOD	Department of Defense
DOE	Department of Energy
DOL	Department of Labor
DOT	Department of Transportation
EDA	Economic Development Administration
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FHA	Federal Housing Administration
FHWA	Federal Highway Administration
FSA	Farm Service Agency
FY	Fiscal Year
HMGP	Hazard Mitigation Grant Program
HUD	Department of Housing and Urban Development
NFIP	National Flood Insurance Program
PRASA	Puerto Rico Aqueduct and Sewer Authority
PREPA	Puerto Rico Electric Power Authority
PRHTA	Puerto Rico Highway and Transportation Authority
SBA	Small Business Administration
UBC	Uniform Building Code
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture